

In the Claims:

Claims 1-28 have been examined.

Claims 1-19 have been allowed.

Claims 20-28 have been rejected.

Cancel claim 21.

Claims 20 and 23-24 are amended here as follows:

1. (previously amended) A method of fabricating microdevices on a workpiece, comprising the steps of:
illuminating a single column of microdevice cells on a mask with pulses of radiation;
continuously moving the workpiece in a direction perpendicular to a long axis of the column of microdevice cells on the mask during illumination of the mask;
and
coordinating the movement of the workpiece with the timing of the pulses of radiation to pattern the workpiece with images of the illuminated single column of microdevice cells on the mask to form corresponding adjacent columnar exposure fields on the workpiece with each columnar exposure field on the workpiece formed by a single pulse of radiation.
2. (previously amended) The method according to claim 1, further including the step of collecting with a projection lens the portion of the pulses of radiation transmitted by the single column of microdevice cells on the mask to be imaged on the workpiece.
3. (previously amended) The method according to claim 2 further including the step of aligning the workpiece relative to an image of the mask produced by the projection lens.

4. (previously amended) The method according to claim 1, wherein the step of illuminating the mask with pulses of radiation includes the step of providing the radiation from a pulsed radiation source or a modulated continuous-wave radiation source.

5. (previously amended) The method according to claim 2, wherein the mask has a first width and the single column of microdevice cells on the mask has a second width that is 10% or less than the first width.

6. (original) The method according to claim 1, wherein the mask contains a single column of microdevice cells.

7. (previously amended) The method of claim 1, wherein:
the mask contains multiple columns of microdevice cells; and
the step of illuminating the mask further includes the step of adjusting illumination to illuminate only a single column of microdevice cells.

8. (previously amended) The method of claim 7, wherein the step of adjusting illumination further includes the step of adjusting an illumination field aperture to illuminate only a single column of microdevice cells.

9. (previously amended) The method according to claim 1, wherein each of the exposure fields has a width-to-length aspect ratio of between about 1:10 and 1:50.

10. (previously amended) The method according to claim 1, wherein each of the microdevices is a thin-film read/write head.

11. (previously amended) The method according to claim 1, further

includes the step of stepping the workpiece in a direction parallel to the direction of a columnar exposure field by at least a columnar exposure field length to form multiple rows of columnar exposure fields.

12. (previously amended) The method according to claim 1, wherein each of the microdevice cells includes an electrical test structure to assist in controlling a lapping operation.

13. (previously amended) The method according to claim 12, wherein: each of the microdevices is a thin-film head with a throat; and the method further includes the step of lapping the microdevices to define a length of a throat thereof.

14. (previously amended) A method of patterning a workpiece with a lithographic system to form microdevices on the workpiece in a manner that reduces colinearity effects, comprising the steps of:

supporting a mask having at least one column of microdevice cells formed thereon;

illuminating one of the at least one column on the mask with pulses of radiation;

collecting the radiation transmitted by the illuminated column on the mask with a projection lens; and

exposing a single columnar exposure field with each of the pulses of radiation as the workpiece is moved continuously at a speed coordinated with the radiation pulses over a scan path normal to the direction of the column of microdevice cells on the mask to form a row of adjacent single columnar exposure fields on the workpiece.

15. (previously amended) The method of claim 14, wherein in the exposing step each single columnar exposure field is formed by a projection lens with the single columnar exposure field having a width of about 10 % or less than the

maximum field width capability of the projection lens.

16. (previously amended) The method according to claim 14, wherein the at least one column on the mask has a width-to-length aspect ratio in the range of about 1:10 to about 1:50.

17. (previously amended) The method of claim 14, wherein:
the mask contains multiple columns of microdevice cells; and
the illuminating step includes the step of adjusting illumination to illuminate only a single column of microdevice cells.

18. (previously amended) The method according to claim 17, wherein the step of adjusting illumination includes the step of adjusting an illumination field stop.

19. (previously amended) The method according to claim 17, wherein the step of adjusting illumination includes the step of concentrating the illumination into the desired long, narrow area occupied by a single column of devices on the workpiece.

20. (previously amended) A method of patterning a workpiece with a lithographic system to form microdevices on the workpiece in a manner that reduces colinearity effects, comprising the steps of:

supporting a mask having at least one column of microdevice cells formed thereon;

illuminating one of the at least one column on the mask with pulses of radiation;

collecting the radiation transmitted by the illuminated column on the mask with a projection lens;

forming a single columnar exposure field on the workpiece with one or more pulses pulse of radiation; and

forming a row of adjacent single columnar exposure fields by stepping the

workpiece by a width of a microcircuit device pattern between exposures.

21. (cancelled)

22. (previously amended) The method according to claim 20, wherein the mask has a first width and a single column of microdevice cells has a second width that is about 10% or less of the first width.

23. (currently amended) The method according to claim 20, further includes the step of slicing the workpiece to form row-bars of microdevice units that contain a single device from many successive columns.

24. (currently amended) A system to pattern a workpiece to form microdevices on the workpiece in a manner that reduces colinearity effects, comprising:

- a radiation source to provide pulses of radiation;
- a radiation source controller in operation communication with said radiation source to control the emission of the radiation pulses from said radiation source;
- an illuminator arranged to receive pulses of radiation from said radiation source and illuminate a single column of microdevice cells on a mask;
- a projection lens arranged to receive pulses of radiation passing through the mask and adapted to form a columnar exposure field of microdevice units on the workpiece that correspond to the column of microdevice cells on the mask;
- a workpiece stage capable to support and move the workpiece over a scan path relative to the projection lens and in a direction normal to the projected direction of the columnar exposure field on the workpiece; and
- a workpiece stage position control unit in operable communication with said workpiece stage and in communication with the radiation source control unit, to control the movement of said workpiece stage over said scan path such that a single

pulse of radiation forms a single columnar exposure field on the workpiece, with each temporally adjacent radiation ~~pulses~~ pulse sequentially forming another adjacent columnar exposure ~~fields~~ field.

25. (original) The system according to claim 24, wherein the illuminator has an associated illumination field, and the width of the column of microdevice cells is about 10% or less than the length of the column.

26. (previously amended) The system according to claim 24, wherein the workpiece stage is a magnetically levitated stage.

27. (previously amended) The system according to claim 24, wherein the workpiece stage is an air bearing stage.

28. (original) The system according to claim 24, further including a pulse stabilization system arranged downstream of said radiation source.